Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Nursing care: percentage of cuff-pressure measurement controls within the recommended range.

Source(s)

Quality indicators in critically ill patients. Madrid (Spain): Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC); 2011. 185 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of cuff-pressure measurement controls within the recommended range.

Rationale

The aim of intensive care medicine is to provide critical patients with the healthcare that they need, ensuring the quality and safety of care. Intensive care medicine is one of the principal components of modern healthcare systems. There is an increasing demand for this resource, which involves high costs.

The quality of care has gradually come to be the central focus of healthcare, and in recent years patient safety has come to represent one of the key aspects of quality. In the case of intensive care medicine, this interest in quality is even more evident, not only because of its social and economic impact, but also because some of the dimensions involved in the quality of care of critical patients take on greater importance: critical patients are more vulnerable, access to critical care is more limited so efforts to distribute resources equitably are more important, scant scientific evidence is available, and the

efficiency is limited.

One fundamental function of cuff pressure is to seal the airway and prevent the aspiration of the contents of the pharynx into the trachea. Thus, excessively low endotracheal-tube or tracheostomy-tube cuff pressure does not permit efficacious mechanical ventilation, increases the risk of bronchoaspiration and thus of ventilator-associated pneumonia (VAP), and makes the patient more susceptible to accidental extubation and displacement of the artificial airway. On the other hand, excessively high cuff pressure could cause ischemia, thereby increasing the risk of tracheobronchial lesions.

Evidence for Rationale

Duguet A, D'Amico L, Biondi G, Prodanovic H, GonzalezBermejo J, Similowski T. Control of tracheal cuff pressure: a pilot study using a pneumatic device. Intensive Care Med. 2007 Jan;33(1):128-32. PubMed

Quality indicators in critically ill patients. Madrid (Spain): Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC); 2011. 185 p.

Rose L, Redl L. Minimal occlusive volume cuff inflation: a survey of current practice. Intensive Crit Care Nurs. 2008 Dec;24(6):359-65. PubMed

Rose L, Redl L. Survey of cuff management practices in intensive care units in Australia and New Zealand. Am J Crit Care. 2008 Sep;17(5):428-35. PubMed

Sole ML, Penoyer DA, Su X, Jimenez E, Kalita SJ, Poalillo E, Byers JF, Bennett M, Ludy JE. Assessment of endotracheal cuff pressure by continuous monitoring: a pilot study. Am J Crit Care. 2009 Mar;18(2):133-43. PubMed

Tablan OC, Anderson LJ, Besser R, Bridges C, Hajjeh R, Centers for Disease Control and Prevention (CDC), Healthcare Infection Control Practices Advisory Committee. Guidelines for preventing health-care--associated pneumonia, 2003: recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee. MMWR Recomm Rep. 2004 Mar 26;53(RR-3):1-36. PubMed

Valencia M, Ferrer M, Farre R, Navajas D, Badia JR, Nicolas JM, Torres A. Automatic control of tracheal tube cuff pressure in ventilated patients in semirecumbent position: a randomized trial. Crit Care Med. 2007 Jun;35(6):1543-9.

Primary Health Components

Nursing care; artificial airway; inflatable cuff; cuff-pressure measurement controls

Denominator Description

Total number of cuff measurement controls (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Number of cuff-pressure measurement controls within the recommended range (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Unspecified

Extent of Measure Testing

Unspecified

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Hospital Inpatient

Intensive Care Units

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age greater than or equal to 18 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Unspecified

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Institutionalization

Therapeutic Intervention

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions

Total number of cuff measurement controls

Population: All cuff pressure controls during the period reviewed in patients with an artificial airway and inflatable cuff.

Exclusions

Unspecified

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Number of cuff-pressure measurement controls within the recommended range

Evidence-based recommendations:

> Maintain cuff pressure on the artificial airway between 20 and 30 cm H_2O.
> Check cuff pressure once every shift and whenever the endotracheal tube is moved.

Exclusions

Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Electronic health/medical record

Paper medical record

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Standard of Comparison

not defined yet

Prescriptive Standard

Standard: 95%

Evidence for Prescriptive Standard

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Identifying Information

Original Title

Cuff pressure.

Measure Collection Name

Quality Indicators in Critically Ill Patients

Measure Set Name

Nursing Care

Submitter

Spanish Society of Intensive and Critical Care and Units Coronary - Clinical Specialty Collaboration

Developer

Spanish Society of Intensive and Critical Care and Units Coronary - Clinical Specialty Collaboration

Funding Source(s)

Boehringer Laboratories

Composition of the Group that Developed the Measure

Work Group for Nursing (SEEIUC)

- Rosa García Díez
- Mar Sánchez Sánchez
- Juan Carlos Muñoz Camargo
- Mónica Vázquez Calatayud
- Rosa Jam Gatell
- Rosana Goñi Viguria
- Emilia Romero de San Pío
- Susana Arias Rivera
- Alicia Robas Gómez
- Juan Ángel Hernández
- Susana Arias Rivera

Scientific Coordination:

- Maria Cruz Martín Delgado
- Jesús Blanco Varela
- Lluís Cabré Pericas
- Pedro Galdos Anuncibay
- Federico Gordo Vidal

Financial Disclosures/Other Potential Conflicts of Interest

Unspecified

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2011 Mar

Measure Maintenance

Unspecified

Date of Next Anticipated Revision

2016 Jul

Measure Status

This is the current release of the measure.

The measure developer reaffirmed the currency of this measure in May 2016.

Measure Availability

Source available in English and Spanish from the Spanish Society of Intensive and Critical Care and Units Coronary (SEMICYUC) Web site.

For more information, contact SEMICYUC at Paseo de la Reina Cristina, 36, 4^{O} D, Madrid, Spain; Phone: +34-91-502-12-13; Fax: +34-91-502-12-14; Web site: www.semicyuc.org; E-mail: secretaria@semicyuc.org.

NQMC Status

This NQMC summary was completed by ECRI Institute on March 20, 2014. The information was verified by the measure developer on April 25, 2014.

The information was reaffirmed by the measure developer on May 10, 2016.

Copyright Statement

Production

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